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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/593,347	01/10/2008	Makoto Sakata	060705	8980

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EXAMINER	
CHAWLA, JYOTI	
ART UNIT	PAPER NUMBER
1781	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/593,347	SAKATA ET AL.	
	Examiner	Art Unit	
	JYOTI CHAWLA	1781	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 January 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8 and 10-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8 and 10-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 January 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *9/19/06, 10/30/06, 12/28/06,9/9/2008, 9/29/10*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims of 1/10/2008, 1-8 and 10-15 are examined in the current application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

A) Claims 1, 4-5, 7-8, 10-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over IDS reference to Hayashi (JP 2003321502 abstract and machine

translation), in view of the combination of Musher and Handbook of Hydrocolloids (Pages 155-168).

Regarding claims 1, 4-5, 7-8 and 10, Hayashi teaches a method for enhancing the emulsification ability of gum arabic comprising a step of making unheated gum arabic into an aqueous solution, and a step of maintaining the thus-obtained aqueous solution to 30 ºC or higher (Abstarct and paragraph 6 of translation), which overlaps with applicant's claimed temperature treatment of below 60ºC (for claims 1 and 7) and 5-40 ºC as recited in claim 4, and 10 to 50 ºC (claim 8). Hayashi does not disclose the entire range of temperature, however, Musher teaches that water soluble gums, such as, gum arabic, to produce a composition without heating (Page 2, Column 1, lines 32-36). Thus treatment of gum arabic in the recited temperature range was known, as disclosed by Musher and Hayashi. Further, emulsions made with gum arabic without application of heat were also known. Therefore It would have been obvious to one of ordinary skill in the art at the time of the invention that gum arabic makes stable emulsions after low temperature treatment, as well as without any heat treatment (Musher).Regarding the overlapping of ranges between the invention and prior art composition it is noted that in the case where the claimed ranges "overlap or lie inside the ranges disclosed by the prior art" a prima facie case of obviousness exists (In re Wetheim, 541 F2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990)).

Regarding the heat treatment time aqueous solution is maintained at below 60ºC of at least 6 hours (claim 5) and the time for which the aqueous solution is maintained at below 60 ºC is at least 3 hours, Hayashi translation , paragraph 12 discloses the claimed limitation of soaking for up to 30 days.

Regarding claim 11, Hayashi teaches gum arabic, belonging to the Acacia Senegal species (translation, pa 16), that typically gum arabic has a mass-average molecular weight of not less than 1.5 million, as evidenced by Handbook of hydrocolloids.

Regarding, claim 12, Hayashi abstract discloses, use of gum arabic as an emulsifier to make emulsified perfume, emulsified coloring matter. It is noted that perfumes comprise fragrant oils, thus, emulsified perfume or emulsified coloring matter would be an emulsion comprising oils as claimed. Musher teaches of an emulsified fat composition(entire document).

Regarding, claims 13 and 15, Hayashi teaches of perfume, confection and Musher teaches of emulsified food base composition, (page 2, column 1, lines 30-45) a method for preparing an emulsion comprising the step of dispersing a hydrophobic material in a hydrophilic solvent or dispersing a hydrophilic material in a hydrophobic solvent, gum arabic as claimed. Therefore, creating an emulsion comprising gum arabic as claimed was known in the art as disclosed by both references. Further, dispersing in hydrophilic solvent, i.e., water was well known in the art (Musher). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Hayashi further in view of Musher and disperse gum arabic in hydrophilic material, at least for the purpose of fully dispersing the gum before adding the hydrophobic component to create a stable O/W or W/O/W emulsion.

Regarding, claim 14, Hayashi abstract discloses, use of gum arabic as an emulsifier to make emulsified perfume, emulsified coloring matter. It is noted that perfumes comprise fragrant oils, thus, emulsified perfume would be an O/W or W/O/W emulsion comprising oils from the recited list from claim 14.

Regarding the limitation of at least one hydrophobic substance selected from the group consisting of essential oils, oil-soluble flavors, oil-soluble colors, oil-soluble vitamins, polyunsaturated fatty acids, animal oils, vegetable oils, sucrose acetate isobutyrate, and medium-chain triglycerides, as recited in claims 14 and 16, Hayashi teaches of perfumes and confections etc which use essential oils for flavor and fragrance. Musher teaches of edible oils, on page 1, Column 2, lines 15-28.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Hayashi further in view of Musher and disperse gum arabic in hydrophilic oily material from the oils and fats disclosed by Musher, at least for the purpose of utilizing most suited fats and oils for the intended purpose to create a stable O/W or W/O/W emulsion.

B) Claims 2-3, 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi, Musher and Handbook of Hydrocolloids as applied to claim 1, further in view of IDS reference to Lee et al (EP 0108594), hereinafter Lee.
Hayashi, in view of the combination of Musher and Handbook of Hydrocolloids (Pages 155-168) have been applied to 1, 4-5, 7-8, 10-16 above.

Regarding the amount of gum arabic in an emulsion as recited in claims 2-3, Hayashi is silent. Musher teaches that gum amounts can be varied based on the viscosity of the emulsion (Page3, Column 1, lines 13-16). Lee teaches of emulsions with 10-30% gum arabic (Page6, lines 23-25). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Hayashi further in view of Lee and utilize gum arabic in an amount to make an emulsion with desired viscosity or thickness.

Regarding the heat treatment time aqueous solution is maintained at below 60ºC of at least 6 hours (claim 5) and the time for which the aqueous solution is maintained at below 60 ºC is at least 3 hours, Hayashi translation, paragraph 12 discloses the claimed limitation of soaking for up to 30 days.

Regarding the pH of the aqueous solution is 4.5 to 6 (claim 6), Hayashi is silent, however, gum arabic was known to form stable acidic emulsified compositions with pH 3.5-4.0 (Lee page 8, line 9). Further, handbook of hydrocolloids discloses that gum arabic does not lose its properties in acidic medium. Furthermore, dispersion of gum arabic in products like salad dressings, spreads, jellies, fruit preserves, having acidities

in the claimed range has been well known in the art (Handbook of Hydrocolloids, Lee) Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Hayashi further in view of Lee and disperse gum arabic in an acidic medium at least for the purpose of creating an emulsion or dispersion with desired tartness or sourness.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JYOTI CHAWLA whose telephone number is (571)272-8212. The examiner can normally be reached on 9:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks can be reached on (571) 272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jyoti Chawla/
Examiner, Art Unit 1781